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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,907	10/29/2003	Tetsuhito Tsukagoshi	Q78094	4502
23373	7590	04/18/2006	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			FISCHER, JUSTIN R	
			ART UNIT	PAPER NUMBER
			1733	

DATE MAILED: 04/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/694,907

Applicant(s)

TSUKAGOSHI ET AL.

Examiner

Justin R. Fischer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-21, 23-28 and 30-34 is/are pending in the application.
- 4a) Of the above claim(s) 23-28 and 30-34 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12 and 15-21 is/are rejected.
- 7) ☒ Claim(s) 13 and 14 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 12 and 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Continental (FR 1596358, of record) and further in view of Maeda (JP 64-30808, of record), Miura (JP 5-96905, of record), and Mechanics of Pneumatic Tires (Pages 212-213 and 881-884) and optionally in view of Gasowski (US 4,922,985, of record). As best depicted in Figures 2 and 3, Continental is directed to a radial, pneumatic tire construction comprising at least one carcass ply 2 formed of steel cords and a bead portion reinforcing layer 9, wherein said carcass ply is turned around bead core 4 from an inside toward an outside and said reinforcing layer extends on the axially inside and outside of said bead core. The reference further teaches that a rubber layer 12 controlling strain is arranged at the end portion of said reinforcing layer. The reference, though, fails to suggest that the carcass is terminated along a peripheral face of the bead core. In any event, it is extremely well known to wrap the carcass turnup around the bead core, as opposed to allowing the end be arranged in the upper bead portion, in order to increase tire durability (eliminates the cords of the carcass from being exposed), as shown for example by Maeda (Abstract) and Miura (Abstract) (carcass turnup end is positioned against the outer peripheral surface of the bead core). It is

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particularly noted that the tire of Maeda is extremely similar to that of Continental in that the tire is formed of a single carcass ply and a bead portion reinforcing layer- in this instance, Maeda specifically recognizes the advantages of modifying a conventional carcass turnup (Figure 4 of Maeda and Figures of Continental) in accordance to the limitations of the claimed invention. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to wrap the carcass of Continental around the bead core such that it terminated along the peripheral face of the bead core.

Regarding the bead filler, the Figures of Continental fail to expressly depict the presence of a "bead filler" or distinct rubber layer radially outward of the bead core 4 (it does appear, though, that inner reference character 15 might be the bead filler). In any event, a "bead filler" represents one of the fundamental components of modern day tire constructions, as shown for example by Mechanics of Pneumatic Tires (Pages 212-213). One of ordinary skill in the art at the time of the invention would have expected a bead filler to be present in the tire of Continental. In this instance, then, the rubber layer 12 would be arranged between a bead filler and a bead portion reinforcing layer.

As to the "plastic deformation region", such an arrangement is defined as being a "formed zone of rectangle, curve, or the like adaptable to a radially sectional profile shape of the bead core" (Page 5). Thus, it is required that the turnup portion or wrap part closely follows the contour of the bead core, whether it be circular, hexagonal, rectangular, or some additional geometry. As depicted in Miura, it appears that such an arrangement is consistent with carcass plies that are positioned on the peripheral

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surface of the bead core. Gasowski is additionally applied to further evidence the known use of a carcass turnup or wrap part having a contour that closely mimics that of the bead core. Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to include a "plastic deformation region" in the tire of Continental. It is emphasized that Miura and Gasowski evidence the known use of such a carcass turnup structure.

With respect to claim 15, Figures 1 and 3 of Continental suggest that the rubber layers are formed with dimensions that satisfy the limitations of the claimed invention. While it is unclear if the drawings are "working drawings", it is clearly evident that the respective layers generally have the same thickness and thus satisfy the broad range of the claimed invention.

Regarding claims 16 and 17, Figure 3 of Continental clearly depicts the rubber layer as protruding slightly beyond the end of the bead portion reinforcing layer and well below the claimed maximum value of 30 millimeters. As to the inner end of the rubber layer, one of ordinary skill in the art at the time of the invention would have recognized that the positioning of said inner end is a function of the radial extent of the bead portion reinforcing layer. Thus, if the end of the bead portion reinforcing layer is slightly decreased, the inner end of the rubber layer would correspond to an upper part of the bead core. It is noted that Continental fails to place any criticality on the specific location of the end of the bead portion reinforcing layer, it being well recognized that such layers are commonly described as having a range of heights and are not limited to a single embodiment (e.g. Figure 3). Absent any conclusive showing of unexpected

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results, one of ordinary skill in the art at the time of the invention would have found it obvious to form the tire of Continental such that the inner end of the rubber layer corresponds to an upper part of the bead core. It is additionally noted that in some of these instances, the inner end of the rubber layer would come into contact with the carcass turnup portion.

3. Claims 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Continental, Maeda, Miura, Mechanics of Pneumatic Tires, and Gasowski as applied in the rejection of claim 12 above and further in view of Kabe (JP 01056210, of record). As depicted in Figures 3 and 4, the tire of Continental does not include a "recess zone" in a portion of the tire located inward from a position of maximum tire width. However, it is well known to provide such contours on the outer surface in order to provide enhanced tire durability, as shown for example by Kabe (Abstract). In particular, such a "recess zone" reduces the amount of shearing strain due to tire deformation (as a result of adjacent portions having large and small thickness). One of ordinary skill in the art at the time of the invention would have found it obvious to form the tire outer surface of Continental with a "recess zone" in order to obtain the aforementioned benefits. It is noted that Kabe specifically recognizes the end of a bead portion reinforcing layer as being a location where such a recess zone would eliminate strains (Figure 6). Lastly, it is emphasized that it is well known to form the tire outer surface with a concave profile, as opposed to a slightly curved profile, in which case a recess zone is formed.

With respect to claim 19, the "recess zone" of Continental would be located in a region axially outward of the end of the bead portion reinforcing layer, such that the

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rubber gauge outward of a height equal to 1.8 times the maximum bead width (as measured from the nominal diameter of the rim flange) would be substantially constant.

As to claim 20, the claim generally requires the recess zone be outward of "an alienation point". As noted above, the recess zone of Continental would be expected to present in a region axially outward of the end of the bead portion reinforcing layer such that it would be radially outward of "an alienation point" that is radially outward of the rim flange and outer surface of the bead.

Regarding claim 21, the "alienation point" can be one of several points that are inward of the "recess zone" (only required that it is inward of the recess zone and outward of the rim flange), such that the thickness at the "alienation point" would be expected to be extremely similar to the maximum bead thickness. Applicant has not provided a conclusive showing of unexpected results to establish a criticality for the claimed relationship.

Allowable Subject Matter

4. Claims 13 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. In particular, Continental suggests that the rubber layer 12 is substantially harder (Page 2, Lines 20-30 of GB equivalent) than the adjacent rubber layers 15. It appears that reference characters 15 are being used to identify the bead filler (inner reference character) and the sidewall portion (outer reference character). As such, one of ordinary skill in the art at the time

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of the invention would not have found it obvious to form the rubber layer of Continental with a hardness between that of the bead filler and the sidewall.

Response to Arguments

5. Applicant's arguments filed February 23, 2006 have been fully considered but they are not persuasive. Applicant initially contends that Continental fails to teach or suggest a bead filler and the examiner provides no support for his conclusion that the alleged "bead filler" would be located axially inward of the turnup ends.

As stated above, Continental fails to expressly use the language "bead filler". However, the reference does include an inner reference character 15 that appears to represent a bead filler. As is well known and conventional in the tire industry, a bead filler represents a fundamental component of modern day tire constructions that is included in nearly every tire construction. One of ordinary skill in the art at the time of the invention would have expected a bead filler to be present in the tire of Continental. It is further noted that the cross-hatching of Continental does indicate that a rubber layer is present radially outward of the bead core- the fact that Continental failed to specifically identify such a layer as the "bead filler" does not suggest that such a component was not present in the tire of Continental (relevant rubber layer can be viewed as "bead filler" independent of it being described as a "bead filler"- all that is required by the term "bead filler" is a rubber layer, which is clearly present in Continental). Lastly, as is conventional in the tire industry and depicted by all of the references of the record, the bead filler is positioned between the main and turnup carcass portions.

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Applicant further argues that the examiner is applying an overly broad definition to the term "plastic deformation". However, as argued by applicant, the language means that the region allows the wrap part to conform, adopt, or follow the shape of the bead core. It is unclear how the references of record are not formed with a plastic deformation region since they since they do conform or follow the shape of the bead core (e.g. JP '905 and US '985). It is emphasized that the prior art of record recognizes the ability to form a carcass turnup structure that closely mimics the contour of the bead core and it appears that such a method is consistent with the techniques used to form tire constructions having a carcass turnup end positioned against the radially outer peripheral surface of the bead core.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R. Fischer** whose telephone number is **(571) 272-1215**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Justin Fischer

April 14, 2006